

REMARKS

Applicants request entry of this Preliminary Amendment prior to prosecution of the application on the merits.

In the parent of the present continuation application, in an Office Action dated March 26, 2003, the Examiner rejected claims 1 and 17 under 35 U.S.C. 103(a) as being unpatentable over Bergmans (U.S. 4,870,657) in view of Tsujimoto (U.S. 5,367,536). Claim 1 reads as follows:

1. A feedforward equalizer for equalizing a sequence of signal samples received from a remote transmitter, the feedforward equalizer having a gain and being included in a receiver, the receiver having a timing recovery module for setting a sampling phase and a decoder, the feedforward equalizer comprising:
 - (a) a non-adaptive filter receiving the signal samples and producing a filtered signal; and
 - (b) a gain stage coupled to the non-adaptive filter, the gain stage allowing adjustment of the gain of the feedforward equalizer by adjusting the amplitude of the filtered signal, the amplitude of the filtered signal being adjusted so as to fit in operational range of the decoder;

wherein the feedforward equalizer does not affect the sampling phase setting of the timing recovery module of the receiver.

On page 3 of the March 26, 2003 Office Action, the Examiner acknowledges that “Bergmans et al fail to explicitly teach a gain stage coupled to the non-adaptive filter, the gain stage allowing adjustment of the gain of the feedforward equalizer by adjusting the amplitude of the filtered signal so as to fit an operational range of the decoder.” The Examiner goes on to assert that Tsujimoto teaches a gain stage 43 coupled to the non-adaptive filter 27, the gain stage 43 allowing adjustment of the gain of the feedforward equalizer 27 by adjusting the amplitude of the filtered signal 61a.” Applicants respectfully disagree and submit that the filter 27 of Tsujimoto is not non-adaptive. The feedforward filter 27 of Tsujimoto is connected to clock recovery circuit 25 to operate at the recovered bit timing. See col. 4, lines 62-65. Therefore, Applicants submit that the feedforward filter 27 is not non-adaptive. Applicants submit that the use

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of a non-adaptive filter is a novel and non-obvious aspect of the present invention. See the last two paragraphs of page 23 of the specification of the present application. Applicants further submit that because the feedforward filter 27 of Tsujimoto is connected to clock recovery circuit 25 to operate at the recovered bit timing, the feedforward filter 27 would in fact affect the sampling phase setting of the clock recovery circuit 25, therefore further distinguishing claim 1 over the combination of Bergmans and Tsujimoto. Applicants further submit that, contrary to the Examiner's assertion on page 3 of the 3/26/03 Office Action, the tap gain controller 43 of Tsujimoto is not coupled to feedforward filter 27, but rather is an integral part of feedforward filter 27. Thus, Applicants submit that claim 1 and all claims depending therefrom are not rendered obvious by the combination of Bergmans and Tsujimoto.

Claim 17 is a method claim having limitations similar to those of apparatus claim 1. Applicants submit that claim 17 and all claims depending therefrom are allowable over Bergmans and Tsujimoto for at least the reasons discussed above with respect to claim 1.

Claim 32 is an independent claim directed to a method for equalizing a sequence of input samples. It is noted that a version of claim 32 (in dependent form) was indicated by the Examiner in the Office Action of 3/26/03 to be allowable if rewritten in independent form. Applicants then submitted claim 32 in its presently amended form in an Amendment mailed on June 24, 2003. In the Office Action (dated August 11, 2003), responding to said Amendment, the Examiner asserted that claim 32 as amended did not include all of the limitations of claim 32 in its dependent form. Applicants respectfully disagree. The sole limitation of dependent claim 32 indicated that "producing a noise-reduced filtered signal is performed prior to adjusting the amplitude of the filtered signal, thereby allowing the noise signal to be substantially unaffected by adjustment of the amplitude of the filtered signal." In claim 32, as amended to be in independent form, step (c) comprises "adjusting the amplitude of the noise-reduced filtered signal such that the amplitude of the filtered signal fits in operational range of the decoder." Because step (c) calls for adjusting the amplitude of the *noise-reduced* filtered signal, it follows that this step is performed after step (b), since step (b) is the step where the noise-reduced filtered signal was produced. For this and other

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reasons, Applicants submit that claim 32 is allowable.

In the Office Action dated March 26, 2003, the Examiner rejected claim 33 under 35 U.S.C. 102(b) as being anticipated by Bergmans (U.S. 4,87,657). Claim 33 reads as follows:

33. A system for demodulating a sequence of input samples received from a remote transmitter, the system being included in a receiver, the receiver having a timing recovery module for setting a sampling phase, the system comprising:

(a) a feedforward equalizer having a gain, receiving and equalizing the input samples; and

(b) a decoder system coupled to the feedforward equalizer to receive and decode the equalized input samples;

wherein the feedforward equalizer does not affect the sampling phase setting of the timing recovery module of the receiver.

On page 2 of the March 26, 2003 Office Action, the Examiner indicates that he considers element 10 of Bergmans to anticipate the decoder system of claim 1. Applicants respectfully submit that element 10 of Bergmans is not a decoder system nor a decoder, but rather a data signal regenerator. See, e.g., col. 4, line 37 of Bergmans. For at least this reason, Applicants submit that claim 33 is not anticipated by Bergmans.

Applicants request allowance of claims 1-3, 7, 11, 15, 17-19, 23, 27 and 31-33.

Please charge any additional fees or credit overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Date: February 3, 2004

Respectfully submitted,



John A. Wiberg
Reg. No. 44,401
Attorney for applicants

McAndrews, Held & Malloy, Ltd.
500 W. Madison St., Suite 3400
Chicago, IL 60661
(312) 775-8000